

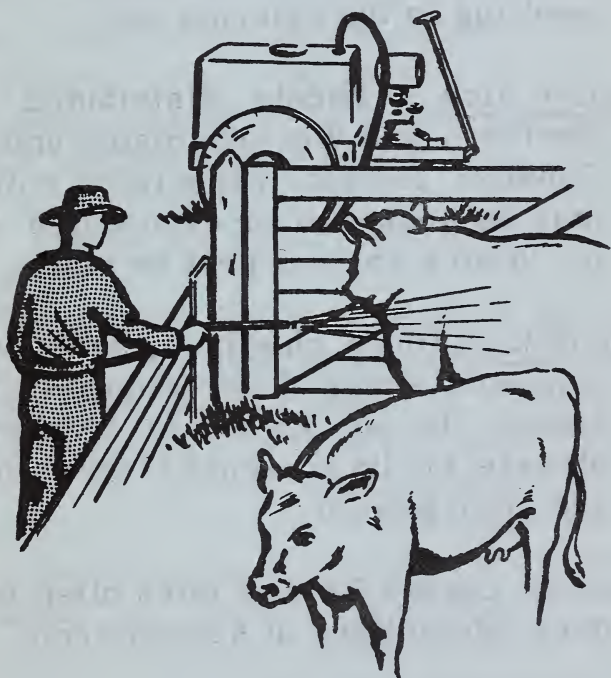
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New Sprays *for* **TICKS** *on* **LIVESTOCK**



**BUREAU OF
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and
PLANT QUARANTINE**
AGRICULTURAL
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Ticks That Infest Livestock

Lone Star tick.--Occurs in all Gulf Coast States and north to Iowa and New Jersey. Is the predominant and most important species in the greater part of its range. Is capable of transmitting tularemia and Rocky Mountain spotted fever to man.

Gulf Coast tick.--Occurs along the Gulf of Mexico. Causes inflammation and swelling in the external ear.

Winter tick.--Widely distributed in Northern and Western States and in Canada. Horses, especially colts, may be weakened or even killed by it. Also a serious pest on cattle.

Ear tick.--Found chiefly in arid and semiarid areas of the Southwestern States. Is not known to transmit disease, but its presence is irritating and often painful.

Lesions caused by tick bites often induce infestations of screwworms.

Prepared by the Division of Insects
Affecting Man and Animals.

NEW SPRAYS FOR TICKS ON LIVESTOCK

Two new spray materials have been found to give practical control of ticks on livestock. One contains toxaphene and the other a mixture of lindane and DDT.

Toxaphene gives immediate control of the ticks and also has a lasting residual effect. Lindane is just as effective against ticks on the animals at the time of treatment, but it has little residual effect. DDT has a greater residual effect but is highly toxic to ticks only before they have taken blood. Since engorged ticks are readily killed by lindane, this insecticide combined with DDT makes a good spray.

How to Prepare the Sprays

Toxaphene insecticides can be purchased in the form of emulsion concentrates and wettable powders. The emulsion concentrates usually contain either 50 or 65 percent of toxaphene and the wettable powders from 25 to 40 percent.

Lindane, the essentially pure gamma isomer of benzene hexachloride, has recently been put on the market. Wettable powders containing 25 percent and emulsion concentrates containing 20 to 25 percent of lindane are available. Technical benzene hexachloride is also formulated as a wettable powder which usually contains 6 percent of the gamma isomer. This material may be substituted for lindane; but because it has a

strong musty odor and may leave harmful residues in foods, its use for tick control is discouraged.

DDT insecticides are available as 25-percent emulsion concentrates and 50-percent wettable powders.

To these commercial products add water to give a spray of the desired strength.

Toxaphene sprays should contain 0.5 percent of this insecticide. Use the following quantities in 100 gallons of water:

Emulsion concentrate:

50 percent-----1 gal.

65 percent-----3 qt.

Wettable powder:

25 percent-----16 lb.

40 percent-----10 lb.

Lindane-DDT sprays should contain 0.025 percent of lindane and 0.5 percent of DDT. Use the following quantities in 100 gallons of water:

Lindane:

Wettable powder

25 percent-----13 oz.

Emulsion concentrate

20 percent-----1 pt.

20 percent-----0.8 pt.

DDT:

Wettable powder

50 percent-----8 lb.

Emulsion concentrate

25 percent-----2 gal.

How to Use These Sprays

These sprays may be applied with power sprayers having good mechanical agitators, or with hand sprayers. With power sprayers either wettable-powder preparations or emulsions may be used, but for application with hand sprayers emulsions are more satisfactory. Power sprayers operated at a pressure of 100 pounds per square inch give excellent results, but lower pressures will be effective if you hold the spray nozzle close to the animal and cover the animal thoroughly.

To control most ticks on livestock, apply the spray thoroughly to all parts of the animal's body. When using it against the ear tick, however, apply with a low-pressure mist sprayer to each ear and to the head and neck. Confine the animal in a chute so you can direct the spray into the ears.

One application will kill all winter ticks present at the time of spraying, and the residual effect may last throughout the tick season. If this treatment is made early in the season, however, a second application may be necessary. Ranchers who prefer not to use sprays on horses may obtain equally good results by sponging them thoroughly with the spray material.

A thorough treatment will eliminate ear ticks within 2 or 3 days. One spraying may be effective for a month or longer, but it is advisable to examine the animals every 2 weeks and to repeat the treatment when necessary.

Against the Lone Star tick the treatment will ordinarily give protection for 3 weeks. When ticks are very numerous, however, and the weather is favorable for tick activity, it may be advisable to respray the animals after 2 weeks.

On animals infested with the Gulf Coast tick give especial attention to the head, neck, and shoulders, so that all engorged ticks will be reached. Repeat the treatment every 3 weeks during the tick season, or every 2 weeks when the infestation is very heavy.

Precautions When Treating Livestock

Be careful to follow directions exactly as they are given in this circular, both in preparing these sprays and in applying them to the animals. If there is any question, consult your county agent.

The strength required to destroy ticks is higher than for control of some insects and leaves a narrower margin of safety to higher animals. Young animals, calves in particular, are especially susceptible to overdoses of these sprays. Suckling calves have been poisoned by sprays containing 1 percent of toxaphene or 0.05 percent of lindane. If you use quantities greater than are specified, you will risk poisoning livestock, but if you use smaller quantities, you may not kill the engorged ticks.

Do not use either of these sprays in combination with arsenical sprays.

When using a power sprayer, be sure to direct the spray back into the tank until the machine has run long enough to assure thorough mixing. Otherwise the first few animals treated may receive too highly concentrated insecticide. Take the same precaution before resuming treatment after any interruption.

When using an emulsion concentrate, be sure that it mixes uniformly with the water. If an oily layer forms, do not apply the spray to the animal.

Many growers have used DDT for control of flies on livestock, and some have used it carelessly with little injury to the animals. Toxaphene and lindane are more toxic than DDT from an acute standpoint.

Do not use toxaphene or the lindane-DDT mixture for dipping animals, at least until more is known about testing the strength of dips.

Do not use the new tick sprays on dairy cows. The Bureau has recently recommended that DDT not be applied to dairy cows, and it is not yet known whether toxaphene can be used on dairy cows without causing harmful chemicals to appear in the milk. For tick control on dairy cows water-base sprays containing pyrethrum or rotenone are recommended. Do not use oil sprays. Pyrethrum sprays should contain 0.1 percent of pyrethrins. To prepare rotenone sprays use 12 ounces of ground derris (or cube) containing 5 percent of rotenone to 1 gallon of water.

For further information concerning
ticks on livestock--their identification,
habits, and control--write to--

The Division of Insects Affecting
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